Case 3184

Tetrapedia Klug, 1810, *T. diversipes* Klug, 1819 and *Exomalopsis* Spinola, 1853 (Insecta, Hymenoptera): proposed conservation of usage of the names by the designation of a neotype for *T. diversipes*

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Abstract. The purpose of this application is to conserve the sense in which the anthophorine bee generic names *Tetrapedia* Klug, 1810 and *Exomalopsis* Spinola, 1853 have been used for more than a century; both are the basis of tribal names. The type species of *Tetrapedia* is *T. diversipes* Klug, 1810; a misidentification of this species by Smith (1854) and Friese (1899) was not recognized by any subsequent author until Moure (2000). The only existing type specimen belongs to *Exomalopsis*, but transfer of the name *Tetrapedia* to the genus always called *Exomalopsis* and disappearance of the latter name would cause great confusion. It is proposed that a neotype for *T. diversipes* should be designated in accordance with Article 75.6 of the Code to conserve the universal understanding of this nominal species and of the genera and tribes mentioned above.

Keywords. Nomenclature; taxonomy; Hymenoptera; APIDAE; TETRAPEDIINI; EXOMALOPSINI; *Tetrapedia*; *Tetrapedia diversipes*; *Exomalopsis*; bees; Brazil.

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1. The genus *Tetrapedia* and the single nominal species *T. diversipes* were described by Klug (1810) on the basis of specimens from Brazil. The description of the genus (pp. 33–35) is unusually detailed, that of the species (pp. 35–36) is also detailed but limited largely to color of the integument and hair. The illustrations (pl. 1) consist of a colored habitus figure and line drawings of the middle leg, hind leg, labium and maxilla.

2. Smith (1854, pl. 7, fig. 10) illustrated a species purporting to be *Tetrapedia diversipes*. His illustration shows three subequal submarginal cells, but in Klug's (1810) description and illustration (and in the genus *Exomalopsis* Spinola, 1853, p. 89) the first and third submarginal cells are longer than the second. Moreover, in Smith's illustration the hind tibial spur is hidden; presumably there was only one short spur, not two long spurs as in Klug's illustration. Details in the illustration by Smith (1854) make it obvious that he misidentified his specimen(s).

3. Friese's (1899) monograph of *Tetrapedia* characterized '*T. diversipes*' in Smith's sense and clearly described features such as the hind basitarsal tooth of the male. This

concept of *T. diversipes* became accepted by subsequent authors, who evidently failed to examine Klug's (1810) work; examples are Moure (1941), Michener & Moure (1957), Roig-Alsina & Michener (1993), Michener, McGinley & Danforth (1994) and Michener (2000). Others referred to the tibial spurs, male posterior basitarsi, or other structures, showing clearly that they were concerned with *Tetrapedia* or *T. diversipes* in the sense of Smith (1854) and Friese (1899), and not in that of Klug (1810); such authors include Schrottky (1902), Ducke (1910, 1912), Michener (1944, 1954), Ayala (1988) and Moure (1995). The nest structure of *Tetrapedia* auctt. appears to be distinctive (Wille & Daly, 1958). Various faunal works also followed the classification of Michener & Moure (1957) and recognized *Tetrapedia* as characterized by those authors. No work before Moure (2000) recognized that *T. diversipes* as described and illustrated by Klug (1810) and shown by his existing type specimen (see below) has slender paired hind tibial spurs and other features of *Exomalopsis*.

4. Klug's description and figures show that he confused specimens of two genera (and tribes). The single original specimen now in the Museum für Naturkunde, Humboldt-Universität, Berlin (seen by both of us) is a specimen belonging to *Exomalopsis* (tribe EXOMALOPSINI) and has been described in detail by Moure (2000). The genus *Exomalopsis* is in need of revision, but according to Dr. Fernando A. Silveira of the Universidade Federal de Minas Gerais the specimen is probably *E. collaris* Friese, 1899 (of which *E. vernoniae* Schrottky, 1909 is a probable synonym). That Klug's habitus illustration of *T. diversipes* was based on an *Exomalopsis* species (and thus agrees with the existing type specimen) is clearly shown by the long middle basitarsus of the figure, as long as the tibia, a feature not found in the other similar genera. Klug's drawings of detached legs and mouthparts, on the same plate as the habitus, are not based on *Exomalopsis*, and must have been based on material, now lost or not recognized, of a superficially similar large black species of *Paratetrapedia* Moure, 1942 (tribe TAPINOTASPIDINI); perhaps the specimen was dissected and subsequently discarded. In several characters the structure shown by Klug's line drawings agrees with that of *Paratetrapedia*, not *Exomalopsis*.

5. *Tetrapedia diversipes* auctt., currently (and by definition) placed in the tribe TETRAPEDIINI, is an entirely different insect from the existing type specimen (tribe EXOMALOPSINI), in spite of superficial similarity. Some generic or tribal characters of Klug's exomalopsine specimen and habitus illustration are the following (contrasting characters of *T. diversipes* auctt. in parentheses): hind tibial spurs two (not one), hind and middle tibial spurs minutely pectinate or apparently simple (not short and coarsely pectinate), scopa dense and well shaped (not irregular and consisting of coarse, radiating hairs).

6. If steps are not taken to stabilize the name *Tetrapedia diversipes* in the sense understood since Smith (1854), or at least Friese (1899), a series of nomenclatural changes would result. *Exomalopsis* Spinola, 1853 would become replaced by *Tetrapedia* Klug, 1810. As a result of the transfer of the name *Tetrapedia* to the taxon now known as *Exomalopsis*, the genus now called *Tetrapedia* would have to be called *Lagobata* Smith, 1861, the next available synonym. The tribe now called EXOMALOPSINI would be called TETRAPEDIINI, and that now known by the latter name would require a new name. The approximate numbers of species involved, should such changes be made, are (using current terminology) 83 in *Exomalopsis* and 13 in *Tetrapedia*.

7. Moure (2000) proposed the new name *Tetrapedia dentipes* for *T. diversipes* auctt., but since the nominal species *T. diversipes* is (and has always been cited as) the type species of *Tetrapedia* this would not solve the problems mentioned above. We propose that a neotype should be designated in accordance with Article 75.6 of the Code to define the nominal species *T. diversipes* in the sense that it has been known for more than a century. The proposed neotype is a male (because the best specific characters are in that sex) from Nova Teutonia, Santa Catarina, Brazil, collected in October 1951 by L.E. Plaumann; it will be deposited in the Museum für Naturkunde der Humboldt-Universität, Berlin. The specimen agrees with material identified as *T. diversipes* Klug, 1810 in various museums, and specifically with the photograph (under the name *T. dentipes*) in Moure (2000) which shows the large hind basitarsal tooth.

8. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary power to set aside all previous fixations of name-bearing type for the nominal species *Tetrapedia diversipes* Klug, 1810 and to designate the specimen proposed in para. 7 above as the neotype;

(2) to place on the Official List of Generic Names in Zoology the following names:
   (a) *Tetrapedia* Klug, 1810 (gender: feminine), type species by monotypy *Tetrapedia diversipes* Klug, 1810;
   (b) *Exomalopsis* Spinola, 1853 (gender: feminine), type species by subsequent designation by Smith (1854) *Exomalopsis auropilosa* Spinola, 1853;

(3) to place on the Official List of Specific Names in Zoology the names:
   (a) *diversipes* Klug, 1810, as published in the binomen *Tetrapedia diversipes* and as defined by the neotype designated in (1) above (specific name of the type species of *Tetrapedia* Klug, 1810);
   (b) *auropilosa* Spinola, 1853, as published in the binomen *Exomalopsis auropilosa* (specific name of the type species of *Exomalopsis* Spinola, 1853).

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